

Appl. Serial No. 10/742,899
Amendment dated April 11, 2005
Reply to Office Action of October 15, 2005

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REMARKS/ARGUMENTS

Applicant has amended the specification for matters of form, and has added certain reference numerals to the drawings to more clearly illustrate the invention as described in the specification.

Claims 1-17, as amended, remain in the application. Parent claim 1, upon which claims 3-7 and 13-17 depend, has been amended to include the subject matter of cancelled claim 2, and to more particularly and definitely define the novelty of the invention over the teachings of the cited prior art. Allowable claim 8, which is directed to the mating headpiece 4 of Fig. 1 and upon which allowable claims 9-12 depend, has been rewritten in independent form.

Allowance of the claims, as amended, is courteously solicited for the following reasons. According to Applicant's invention, improved closure means are provided for sealing the dispenser in such a manner that "oxidation of the paste-like product to be dispensed is avoided." (page 2, lines 17-20). To this end, when the main headpiece 3 is biased by spring 7 toward its upper first position illustrated in Figs. 1 and 6a, the upper cylindrical surface 31b of bearing means 31 arranged on the main headpiece 3 initially closes the radially outwardly directed product supply outlets 58 at the upper end of the pressure piston 5. At this time, the upper end surface 54 of the delivery piston is spaced by the distance "a" from the adjacent surface 35 of the headpiece 3. When the main headpiece is depressed downwardly relative to the piston 5 to the intermediate second position shown in Fig. 6b, the bearing surface 31a is displaced downwardly to uncover and open the piston outlet opening 58, thereby to afford communication between the delivery chamber 100 and the discharge channel 32 via the longitudinal piston channel 50a and the outlet openings 58. Upon further downward displacement of both the headpiece and the piston relative to the container (Fig. 6c), the paste-like product is pumped by the pressure piston 5 from the delivery chamber 100 to the discharge channel 32 for discharge via the main headpiece outlet 39. Therefore, in accordance with a characterizing feature of the invention, "upon a stroke movement of the headpiece for discharging paste-like material a release of the delivery channel outlet opening is easily achieved in that the delivery shaft is moved relative to the bushing. The preferred variant is not only simple, but also permits an arrangement of the delivery channel outlet

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completely different from that of Applicant's invention.

Applicant further points out that in the Czech dispenser, the head piece 7 includes a discharge channel 19 which has an initial or lower axial portion and a subsequent or upper lateral portion. The axial portion at an intermediate portion thereof includes a flap valve 28 allowing a flow of past-like product from the pump chamber 15 into the axial portion and thereafter to the lateral portion, while preventing a flow in the opposite direction. The pump chamber must be exposed to a significant pressure that the closing forces of the flap valve can be overcome otherwise no discharge of past-like product into the discharge channel occurs. This means that increased forces have to be applied to the head piece for obtaining a discharge of products. Moreover the problem exists that a significant amount of product which has passed the flap valve is held withdrawn in the enlarged discharge path between the flap valve and the discharge opening of the discharge channel. Thus there are significant amounts of the product which communicate in permanent manner via the discharge opening with the ambient air and may be affected thereby. For instance certain type of past-like product like food stuff may undergo a change in flavour and colour due to oxydation. Pharmaceutical substances may lose the pharmaceutical effects. Many cosmetic products prior to use should be protected from permanent exposure to air for preserving full cosmetic effects. More important is that all products exposed to air can dry and thereby may prevent an opening of the flap valve, in a worst case preventing further use of the dispenser. These problems are fully overcome by the specific valve structure used in the present invention which not only significantly reduces the amount of dead masses of product remaining in the discharge channel after use, but also is not affected in its function by an amount of product in the discharge channel which may have become dry. Further this specific valve structure has the advantage that in course of the return stroke movement of the headpiece into the initial position the valve does not immediately shut off like a flap valve does, so that at least some amount of paste-like product in the discharge channel temporarily is exposed to a negative pressure in the pumping chamber caused by the return stroke and thereby returned into the pumping chamber. Similarly, none of the remaining references of record anticipates or renders obvious Applicant's invention recited in the amended claims.

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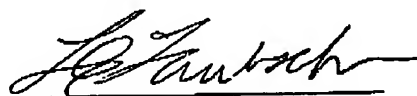
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Since all the matters of form in the specification have been complied with, since claims 8-12 have been indicated to be directed to allowable subject matter, and since the remaining claims have been amended to more particularly and definitely define the novelty of the present invention over the teachings of the prior art, it is respectfully believed that the application is now in condition for allowance.

Favorable action is courteously solicited.

Respectfully submitted,

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